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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,552	10/07/2004	Martin Bernardus Johannes Leusenkamp	050348-01585	6903
7590	10/03/2005		EXAMINER	
Kirk D Houser Eckert Seamans Cherin & Mellott 600 Grant St 44th Floor Pittsburgh, PA 15219			FISHMAN, MARINA	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/510,552

Applicant(s)

LEUSENKAMP ET AL.

Examiner

Marina Fishman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### 33DETAILED ACTION

#### *General status*

1. This is a Final Action on the Merits. Claims 1 - 10 are pending in the case and are being examined.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is not clear where support for recitation "substantially 90 degrees, but less than 90 degrees" is found in the specification. The instant specification [page 4, lines 28+] cites "the electric field distribution could **in theory** be even better if the cylindrical end face 11 of the ceramic tube 3 extends still further inwards," this portion of the instant specification only discusses **a theoretical possibility** of the invention and not an actual part of the invention. Numeral 13 [Figure 3 of the instant invention] represent inner wall making substantially 90 degrees with the end face 13. The dotted line 12, only represents a theoretical possibility. The triple junction 9 [Figure 3] is maintained at intersection of inner wall 13 and the end face 11 (and not at the intersection of line 12 and end face 11).

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***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 - 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Stegmüller [US 4,962,289].

Stegmüller discloses a ceramic tube [5] for use in a vacuum circuit breaker with:

- the ceramic tube [5] being cylindrical in shape with a set length and a set internal diameter, with a cylindrical end face [Figure 3] at each end of the cylinder shape;
- each cylindrical end face being structured to be secured in vacuum tight manner [Figures 1 - 7] to a metal end cap [14a] to form a vacuum chamber, characterized in that the cylindrical end face is shaped in such a manner that, in the assembled state, it makes contact with the metal end cap [14a], at least as far as the internal diameter of the ceramic tube in order to prevent, in operation of the vacuum circuit breaker, a concentration of electrical field at the triple junction of metal end cap [14a], ceramic tube [5] and vacuum chamber .

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Regarding Claims 2 and 8 (as best understood), Stegmüller discloses the ceramic tube [5] in which the cylindrical end face on an inner side of the ceramic tube forms an angle of substantially  $90^\circ$ , but not greater than  $90^\circ$  with an inner surface of the ceramic tube.

Regarding Claims 3, 5 and 7, Stegmüller discloses the ceramic tube [5] in which the cylindrical end face on an outer side of the ceramic tube forms an angle of at least  $90^\circ$  with an outer surface of the ceramic tube.

Regarding Claims 4, 6 and 9, Stegmüller discloses a vacuum breaker [Abstract] with the ceramic tube [5].

5. Claims 1 - 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Sinnecker [US 4,445,016].

Sinnecker discloses a ceramic tube [25] for use in a vacuum circuit breaker with:

- the ceramic tube [25] being cylindrical in shape with a set length and a set internal diameter, with a cylindrical end face [Figure 2] at each end of the cylinder shape;
- each cylindrical end face being structured to be secured in vacuum tight manner [Column 2, line 53 +] to a metal end cap [26] to form a vacuum chamber [Abstract], characterized in that the cylindrical end face is shaped in such a manner that, in the assembled state, it makes contact with the metal end cap [26], at least as far as the internal diameter of the ceramic tube in order to prevent, in operation of the vacuum circuit breaker, a

concentration of electrical field at the triple junction of metal end cap [26], ceramic tube [25] and the vacuum chamber .

Regarding Claims 2 and 8 (as best understood), Sinnecker discloses the ceramic tube [25] in which the cylindrical end face on an inner side of the ceramic tube forms an angle of substantially  $90^\circ$ , but not greater than  $90^\circ$  with an inner surface of the ceramic tube.

Regarding Claims 3, 5 and 7, Sinnecker discloses the ceramic tube [25] in which the cylindrical end face on an outer side of the ceramic tube forms an angle of at least  $90^\circ$  with an outer surface of the ceramic tube.

Regarding Claims 4, 6 and 9, Sinnecker discloses a vacuum breaker [Abstract] with the ceramic tube [25].

6. Claims 1 - 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Siemes AG [DE 9205493U].

Siemes AG [DE 9205493U] discloses a ceramic tube [2] for use in a vacuum

circuit breaker with:

- the ceramic tube [2] being cylindrical in shape with a set length and a set internal diameter, with a cylindrical end face [Figure 1] at each end of the cylinder shape;
- each cylindrical end face being structured to be secured in vacuum tight manner to a metal end cap [3] to form a vacuum chamber, characterized in that the cylindrical end face is shaped in such a manner that, in the assembled state, it makes contact

with the metal end cap [3], at least as far as the internal diameter of the ceramic tube in order to prevent, in operation of the vacuum circuit breaker, a concentration of electrical field at the triple junction of metal end cap [3], ceramic tube [2] and vacuum chamber .

Regarding Claims 2 and 8 (as best understood), Sinnecker discloses the ceramic tube [2] in which the cylindrical end face on an inner side of the ceramic tube forms an angle of at most  $90^\circ$  with an inner surface of the ceramic tube.

Regarding Claims 3, 5 and 7, Sinnecker discloses the ceramic tube [2] in which the cylindrical end face on an outer side of the ceramic tube forms an angle of at least  $90^\circ$  with an outer surface of the ceramic tube.

Regarding Claims 4, 6 and 9, Sinnecker discloses a vacuum breaker with the ceramic tube [2].

### ***Response to Arguments***

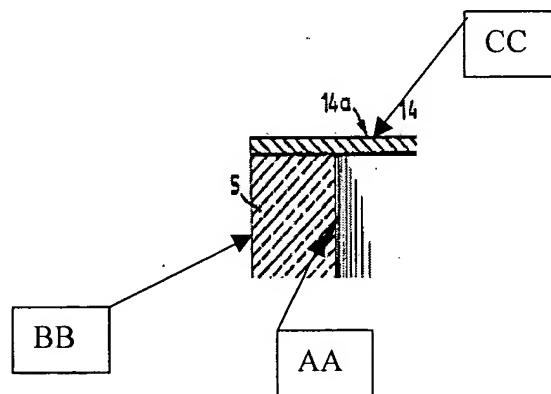
7. Applicant's arguments filed 09/15/2005 have been fully considered but they are not persuasive.

8. The rejections in the previous office action under 35 USC §112, second paragraph and claim objections are withdrawn in view of Applicant's amendments.

The Applicant has argued "Stegmuller does not teach or suggest any problem associated with an electrical field, much less, any concentration of electrical field at triple junction of metal cap, ceramic tube and vacuum chamber." Applicant also made similar arguments in respect of Sinnecker and Siemens AG references. Examiner

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would like to state that the applied references do satisfy the structure recited in the claim(s) and that the references would function the same way as Applicant's invention. In other words, the applied references are capable of satisfying the functional limitation "in order to prevent, in operation of the vacuum circuit breaker, a concentration of electrical field at the triple junction of metal end cap, ceramic tube and vacuum chamber." It is also noted that the claims recites the angular relationship between inner surface and end face, outer surface and end face. Each of the references Stegmuller, Sinnecker and DE 92 94393, disclose ceramic tube with flat end face and inner and outer diameters. In each case, a projected line AA parallel to the inner surface (or the outer surface - BB) makes substantially 90 degrees with the end face CC of the ceramic tube.



### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory



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action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Fishman whose telephone number is 571-272-1991. The examiner can normally be reached on 7-5 M-T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marina Fishman  
September 27, 2005



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09/30/05